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EXAMINER	
LOO, JUVENA W	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/722,048	STEWART, MARK ANDREW WHITTAKER	
	Examiner	Art Unit	
	JUVENA LOO	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-15,17 and 19-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-15,17,and 19-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 7-12, 17, 19-20, 24-25, and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ma (6,157,643).

Regarding claim 1, *a method, comprising*:

providing a plurality of first stage switches (Ma: see Figures 9, 10, and 11 CU and SE2);

providing a plurality of second stage switches coupled to each of the plurality of first stage switches (Ma: see Figures 9, 10, and 11 SE3), *wherein the plurality of second stage switches are coupled to each of the plurality of first stage switches to form a CLOS network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42);

providing a plurality of sources coupled to the CLOS network (Ma: see Figures 1 and 2);

providing a plurality of destinations coupled to the CLOS network (Ma: see Figures 1 and 2);

calculating a plurality of routing trees each routing tree comprising the plurality of switches (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

calculating a plurality of Destination Location Identifiers (DLID) and a set of forwarding instructions for each of the plurality of first stage and second stage switches, wherein each of the plurality of DLIDs corresponds to one of the plurality of routing trees and one of the plurality of destinations (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50); *and*

populating a forwarding table of each of the plurality of first stage and second stage switches in the CLOS network with the plurality of DLIDs and the set of forwarding

instructions (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50) *and wherein the forwarding instructions create a path between each of the plurality of sources and each of the plurality of destinations to make the CLOS network operate as a strictly non-interfering network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 2, *wherein each of the plurality of destinations is identified by a BaseLID* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42).

Regarding claim 5, *further comprising*:

creating a packet at one of the plurality of sources, wherein the packet is addressed to one of the plurality of destinations (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

executing a rearrangement algorithm for the CLOS network (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

assigning one of the plurality of DLIDs to the packet (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50); *and*

the packet following a path from the one of the plurality of sources, through one of the plurality of first stages switches and one of the plurality of second stage switches, to the one of the plurality of destinations, wherein the one of the plurality of first stage switches and the one of the plurality of second stage switches forward the packet according to the one of the plurality of DLIDs assigned to the packet (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 7, *wherein the packet following the path comprises looking up the one of the plurality of DLIDs assigned to the packet in the forwarding table in the one of the plurality of first stage switches and in the one of the plurality of second stage switches along the path from the one of the plurality of sources to the one of the plurality of destinations* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 8, *wherein calculating the plurality of routing trees comprises calculating the plurality of routing trees sufficient to execute the rearrangement algorithm* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 9, *wherein the packet following the path comprises the one of the plurality of first stage switches and the one of the plurality of second stage switches forwarding the packet in accordance with the one of the plurality of DLIDs assigned to the packet as found in the forwarding table in the one of the plurality of first stage switches and in the one of the plurality of second stage switches* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 10, *a method, comprising*:

providing a plurality of first stage switches (Ma: see Figures 9, 10, and 11 CU and SE2) *and a plurality of second stage switches* (Ma: see Figures 9, 10, and 11 SE3) *coupling a plurality end nodes to one another to form a network*, *the plurality of second stage switches coupled to each of the plurality of first stage switches* (Ma: see Figure 9, 10, and 11);

calculating a plurality of routing trees comprising the plurality of first stage switches and one of the plurality of second stage switches (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

calculating a plurality of Destination Location Identifiers (DLID) and a set of forwarding instructions for each of the plurality of first stage and second stage switches, wherein each of the plurality of DLIDs corresponds to one of the plurality of routing trees and one of the plurality of end nodes (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant

outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50); *and*

populating a forwarding table of each of the plurality of first stage and second stage switches with the plurality of DLIDs and the set of forwarding instructions (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50) *and wherein the forwarding instructions create a path between each of the plurality of end nodes that enables the network operate as a strictly non-interfering network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 11, *wherein the network is a CLOS network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5

and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 12, *wherein each of the plurality of end nodes comprises a destination, and wherein the destination is identified by a BaseLID* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42).

Regarding claim 17, *a method, comprising*:

providing a plurality of first stage switches (Ma: see Figures 9, 10, and 11 CU and SE2) *and a plurality of second stage switches* (Ma: see Figures 9, 10, and 11 SE3) *coupling a plurality destinations to a plurality of destinations to form a CLOS network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42)*, the plurality of second stage switches coupled to each of the plurality of first stage switches* (Ma: see Figures 9, 10, and 11);

creating a packet at one of the plurality of sources, wherein the packet is addressed to one of the plurality of destinations (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through

column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42);

executing a rearrangement algorithm for the CLOS network (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

assigning one of a plurality of Destination Location Identifiers (DLIDs) to the packet (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42)*; and*

the packet following a path from the one of the plurality of sources, through one of the plurality of first stage switches and one of the plurality of second stage switches, to the one of the plurality of the destinations (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42)*, wherein the one of the plurality of first stage switches and the one of the plurality of second stage switches forward the packet according to the one of the plurality of DLIDs assigned to the packet* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in

column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42) *and wherein the path is part of the CLOS network operating as a strictly non-interfering network* ((Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42).

Regarding claim 19, *wherein the packet following the path comprises looking up the one of the plurality of DLIDs assigned to the packet in a forwarding table in the one of the plurality of first stage switches and in the one of the plurality of second stage switches along the path from the one of the plurality of source to the one of the plurality of destinations* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 20, *wherein the packet following the path comprises the one of the plurality of first stage switches and the one of the plurality of second stage switches forwarding the packet in accordance with the one of the plurality of DLIDs assigned to the packet as found in a forwarding table in the one of the plurality of first stage*

switches and in the one of the plurality of second stage switches (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 24, *a method, comprising:*

providing a plurality of first stage switches (Ma: see Figures 9, 10, and 11 CU and SE2);

providing a plurality of second stage switches coupled to each of the plurality of first stage switches (Ma: see Figures 9, 10, and 11 SE3)*, wherein the plurality of second stage switches are coupled to each of the plurality of first stage switches to form a CLOS network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42);

providing a plurality of nodes coupled to the first stage switches and each operable to act as a source and a destination (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through

column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42);

receiving requests indicating dynamic allocation of the plurality of nodes to a plurality of sources and a plurality of destinations in a predetermined time window (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50)*;*

calculating a plurality of routing trees, each routing tree comprising the plurality of switches (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50)*;*

calculating a plurality of Destination Location Identifiers (DLID) and a set of forwarding instructions for each of the plurality of first stage and second stage switches, wherein each of the plurality of DLIDs corresponds to one of the plurality of routing trees and one of the plurality of destinations (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column

8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50)*; and*

populating a forwarding table of each of the plurality of first stage and second stage switches in the CLOS network with the plurality of DLIDs and the set of forwarding instructions (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50) *and wherein the forwarding instructions create a path between each of the plurality of sources and each of the plurality of destinations to make the CLOS network operate as a strictly non-interfering network* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 25, *wherein each of the plurality of destinations is identified by a BaseLID* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG.

2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42).

Regarding claim 28, *further comprising:*

creating a packet at one of the plurality of sources, wherein the packet is addressed to one of the plurality of destinations ((Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

executing a rearrangement algorithm for the CLOS network (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50);

assigning one of the plurality of DLIDs to the packet (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is

evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50); *and*

the packet following a path from the one of the plurality of sources, through one of the plurality of first stages switches and one of the plurality of second stage switches, to the one of the plurality of destinations, wherein the one of the plurality of first stage switches and the one of the plurality of second stage switches forward the packet according to the one of the plurality of DLIDs assigned to the packet (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 29, *wherein the packet following the path comprises looking up the one of the plurality of DLIDs assigned to the packet in the forwarding table in the one of the plurality of first stage switches and in the one of the plurality of second stage switches along the path from the one of the plurality of sources to the one of the plurality of destinations* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line

42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 30, *wherein calculating the plurality of routing trees comprises calculating the plurality of routing trees sufficient to execute the rearrangement algorithm* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Regarding claim 31, *wherein the packet following the path comprises the one of the plurality of first stage switches and the one of the plurality of second stage switches forwarding the packet in accordance with the one of the plurality of DLIDs assigned to the packet as found in the forwarding table in the one of the plurality of first stage switches and in the one of the plurality of second stage switches* (Ma: see Figures 2, 3a, 3b, 4, 8, 9, 10, and 11; see also "Referring to FIG. 2…as described above" in column 5, line 47 through column 8, line 17; see also "In FIG. 8 is shown…is illustrated in FIG. 11" in column 11, line 33 through column 12, line 42; see also Figures 4 and 5 and "As is evident…vacant outputs 1 and 7" in column 7, line 50 through column 8, line 43; see

also "Broadly, all routing network elements…reaching the value n)" in column 9, lines 11 – 50).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3-4, 13-15, 21-23, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma (6,157,643) in view of Brahmaroutu (US 2003/0033427 A1).

Ma discloses all the limitations as in paragraph 2 above. Ma does not explicitly disclose the following features: regarding claim 3, *wherein each of the plurality of second stage switches comprises a spine node, and wherein calculating the plurality of routing trees comprises, for each spine node in the CLOS network, calculating a first shortest path from each spine node to each of the plurality of sources and each of the plurality of destinations;* regarding claim 4, *wherein each of the plurality of second stage switches comprises a spine node, and wherein each of the plurality of routing trees comprises a*

*plurality of links that form a second shortest path from one of the plurality of sources or one of the plurality of destinations to each spine node; r*egarding claim 13, *wherein each of the plurality of second stage switches comprises a spine node, and wherein calculating the plurality of routing trees comprises, for each spine node in the network, calculating a shortest path from each spine node to each of the plurality of end nodes*; regarding claim 14, *wherein each of the plurality of second stage switches comprises a spine node, and_wherein each of the plurality of routing trees comprises a plurality of links that form a shortest path from each of the plurality of end nodes to [[a]] each spine node*; regarding claim 15, *wherein each shortest path is loop-less*; regarding claim 21, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification*; regarding claim 22, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification*; regarding claim 23, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification;* regarding claim 26, *wherein each of the plurality of second stage switches comprises a spine node, and wherein calculating the plurality of routing trees comprises, for each spine node in the CLOS network, calculating a first shortest path from each spine node to each of the plurality of sources and each of the plurality of destinations*; regarding claim 27, *wherein each of the plurality of second stage switches comprises a spine node, and wherein each of the plurality of routing trees comprises a*

plurality of links that form a second shortest path from one of the plurality of sources or one of the plurality of destinations to each spine.

Brahmaroutu discloses a mechanism to program forwarding tables comprising the following features:

Regarding claim 3, *wherein each of the plurality of second stage switches comprises a spine node* (Brahmaroutu: see Figure 4)*, and wherein calculating the plurality of routing trees comprises, for each spine node in the CLOS network, calculating a first shortest path from each spine node to each of the plurality of sources and each of the plurality of destinations* (Brahmaroutu: see Figure 6 and "FIG. 6 illustrates…recorded in TABLE 1" in page 5, sections 0040 – 0042; see also "TABLE 2 shows…the destination switch" in page 6, section 0047).

Regarding claim 4, *wherein each of the plurality of second stage switches comprises a spine node* (Brahmaroutu: see Figure 4)*, and wherein each of the plurality of routing trees comprises a plurality of links that form a second shortest path from one of the plurality of sources or one of the plurality of destinations to each spine node* (Brahmaroutu: see Figure 6 and "FIG. 6 illustrates…recorded in TABLE 1" in page 5, sections 0040 – 0042; see also "TABLE 2 shows…the destination switch" in page 6, section 0047).

Regarding claim 13, *wherein each of the plurality of second stage switches comprises a spine node, and wherein calculating the plurality of routing trees comprises, for each spine node in the network, calculating a shortest path from each spine node to each of the plurality of end nodes* (Brahmaroutu: see Figure 6 and "FIG. 6 illustrates…recorded in TABLE 1" in page 5, sections 0040 – 0042; see also"TABLE 2 shows…the destination switch" in page 6, section 0047).

Regarding claim 14, *wherein each of the plurality of second stage switches comprises a spine node, and wherein each of the plurality of routing trees comprises a plurality of links that form a shortest path from each of the plurality of end nodes to each spine node* (Brahmaroutu: see "Then the subnet manager…other switch" in page 5, section 0046).

Regarding claim 15, *wherein each shortest path is loop-less* (Brahmaroutu: see "The subnet manager…multiple LIDs" in page 6, section 0055).

Regarding claim 21, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification* (Brahmaroutu: see "According to…by the InfiniBand™ Trade Association" in page 2, section 0021).

Regarding claim 22, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification* (Brahmaroutu: see "According to…by the InfiniBand™ Trade Association" in page 2, section 0021).

Regarding claim 23, *wherein each of the plurality of first stage switches and each of the plurality of second stage switches is an INFINIBAND switch in compliance with an INFINIBAND Architecture Specification* (Brahmaroutu: see "According to…by the InfiniBand™ Trade Association" in page 2, section 0021).

Regarding claim 26, *wherein each of the plurality of second stage switches comprises a spine node* (Brahmaroutu: see Figure 4), *and wherein calculating the plurality of routing trees comprises, for each spine node in the CLOS network, calculating a first shortest path from each spine node to each of the plurality of sources and each of the plurality of destinations* (Brahmaroutu: see Figure 6 and "FIG. 6 illustrates…recorded in TABLE 1" in page 5, sections 0040 – 0042; see also "TABLE 2 shows…the destination switch" in page 6, section 0047).

Regarding claim 27, *wherein each of the plurality of second stage switches comprises a spine node* (Brahmaroutu: see Figure 4), *and wherein each of the plurality of routing trees comprises a plurality of links that form a second shortest path from one of the plurality of sources or one of the plurality of destinations to each spine*

(Brahmaroutu: see Figure 6 and "FIG. 6 illustrates…recorded in TABLE 1" in page 5, sections 0040 – 0042; see also "TABLE 2 shows…the destination switch" in page 6, section 0047).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Ma using the features, as taught by Brahmaroutu, in order to program switch forwarding tables without any routing ambiguity (Brahmaroutu: see "The subnet manager…between switches" in page 6, section 0059).

Response to Arguments

5. Applicant's arguments with respect to claims 1, 10, 17, and 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUVENA LOO whose telephone number is (571)270-1974. The examiner can normally be reached on Monday - Friday: 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUVENA LOO/
Examiner
Art Unit 2416
March 16, 2009

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2416